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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

NGUYEN, VAN KIM T

ART UNIT PAPER NUMBER

2151

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/021,152

Applicant(s)

CHEN ET AL

Examiner

Van Kim T. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☒ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/25/02; 3/31/03; 04/11/03</u> | 6) <input checked="" type="checkbox"/> Other: <u>(PTO-1449) 9/11/03</u> . |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-5, 11-16, and 27-35 are rejected under 35 U.S.C. 102(e) as being anticipated by Cam et al (US 2002/0126704), hereinafter Cam.

Regarding claim 1, 11, 16, 27, and 31 as shown in Figure 8, Cam discloses a method comprising:

reading a status of a buffer (FIFO) used to receive network packets transmitted from a different chip (e.g., PHY device or Link Layer device, para 0002-0003, para 0006: lines 12-17);
and

transmitting to the different chip (e.g., PHY device or Link Layer device) an unscheduled flow control packet (e.g., control word can be inserted at any point during the data transfer) including information about the status of the buffer (para 0007-0008).

Cam also discloses each of the periodic transmission of flow control data is faster than transmission of one of the network packets (para 0053 - 0056, 700 MHz nominal data rate vs. 87.5 MHz nominal clock rate).

Regarding claims 2, 12, and 32, Cam also discloses the buffer is associated with a port (e.g., sequence of ports of one port) through which the network packets travel (para 0085).

Regarding claims 3 and 13, Cam also discloses the buffer is associated with an aggregate of ports (sequence of ports) through which different ones of the network packets travel (para 0085).

Regarding claims 4 and 14, Cam also discloses the network packets are IP packets (e.g., applicable to Ethernet applications, para 0042; for the network to be capable of transporting Ethernet packets to and from the application layer, it must rely on packet switch network based protocol TCP/IP which provides communication across interconnected networks, between computers with diverse hardware architectures and between various computer operating systems. Hence inherently the network packets are IP packets).

Regarding claims 5 and 15, Cam also discloses each network packet is associated with a port (TxAddr[n:1] and RxAddr[n:1]) through which the network packet will travel (para 0005).

Regarding claims 17 and 28, Cam also discloses the recipient unit includes a buffer (FIFO), wherein the unscheduled flow control packet comprising control data (e.g., TxStart/RxStart; TxClk/RxClk; TxPrty/RxPrty) and port data (TxAddr[n:1] and RxAddr[n:1]), and wherein the unscheduled flow control packet is associated with the buffer (e.g., sequence of ports of one port, para 005 and para 0085).

Regarding claims 18-19, 29-30, and 33-34, Cam also discloses the buffer is associated with an aggregate of ports through which different ones of the network packet travel, and wherein the port data comprises a bit pattern that is associated with the buffer being used in the aggregate among all available ports (para 0078-0080 and para 0085; esp. para 0078: lines 8-13).

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Regarding claim 20, Cam also discloses the control data includes a command from the Optical Internetworking Forum SPI-4 Phase 2 Implementation agreement (para 0002 and para 0042).

Claim Rejections - 35 USC § 102

3. Claims 1, 11, 16, 27-28, and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Ramakrishnan (US 6,167,029).

Regarding claims 1, 11, 16, 27 and 31, as shown in Figures 4 and 6, Ramakrishnan discloses a method comprising:

reading a status (monitoring a level indicator) of a buffer (604, 606) used to receive network packets transmitted from a different chip (e.g., data transmitted from physical layer to 406, 602; col. 5: lines 16-38, col. 7: lines 7-40, and col. 8: lines 21-23); and

transmitting to the different chip an unscheduled flow control packet (e.g., pause frames are automatically generated based on buffer capacity) including information about the status of the buffer (col. 7: line 41 – col. 8: line 20).

modifying a rate at which a network packet is transmitted to the different chip, based on the information in the unscheduled flow control packet (e.g., data transmission is temporary stopped; col. 6: lines 39-45).

Regarding claim 28, Ramakrishnan also discloses the unscheduled flow control packet comprising control data (510) and port data (502, 504), (col. 6: lines 46-67).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6-10 and 21-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ramakrishnan (US 6,167,029).

Regarding claims 6 and 21, As shown in Fig. 11, Ramakrishnan discloses a method and system comprising

receiving a network packet from a sender chip (1102/1106), wherein the network packet was transmitted during a first period (normal transmission period, e.g., buffer capacity is not near available capacity);

storing the network packet in a packet buffer (1112, 1114), wherein the packet buffer is associated with a port through which the network packet will travel (col. 13: lines 32-46);

generating an unscheduled flow control packet (pause frames), wherein the unscheduled flow control packet comprises information relating to the packet buffer (level of indicator of buffer); and

transmitting the unscheduled flow control packet to the sender chip (1102/1106), wherein the unscheduled flow control packet is transmitted during a second period (pause time).

Though Ramakrishnan does not explicitly disclose the second period is shorter than the first period, but since each pause time can be designed by two bytes, which can cause delay of 0-

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4 time slots (col. 6: lines 55-61), and since pause time only means to temporarily stop transmitting data during periods the buffer near its available capacity, it would have been obvious to one of ordinary skill in the art at the time the invention was made that in a well designed communications network, the second period must be shorter than the first period, in order to transmit data smoothly, with less delays.

Regarding claims 7 and 22-23, Ramakrishnan also discloses the unscheduled flow control packet comprises control data (510) and port data (Fig. 5502, 504; col. 6: lines 46-67).

Regarding claims 8 and 24, Ramakrishnan also discloses the port data comprises a bit pattern (Fig. 5: 502, 504, 506, 508, 510) that is associated with the packet buffer (Fig. 6: 600, 602, 604, 606) being used in the aggregate (col. 6: line 46 – col. 8: line 37).

Regarding claims 9 and 25, though Ramakrishnan does not explicitly call for the control data requiring one clock cycle for transmission during the second period, and the port data requiring four clock cycles for transmission during the second period, but since Ramakrishnan teaches the flow system can accept external controls (col. 7: line 40 – col. 8: line 6; esp. col. 7: lines 50-54 and 64), it would have been obvious to one of ordinary skill in the art at the time the invention was made that the frequency of transmitting control data and port data can be configured as needed, i.e., one clock cycle for transmission for the control data during the second period, and four clock cycles for the port data during the second period, by manipulating the threshold levels, motivated by the need of conforming to the speed of the network link between the sending station and the receiving station.

Regarding claims 10 and 26, though Ramakrishnan does not explicitly disclose the control data including a command from the Optical Internetworking Forum SPI-4 Phase 2

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Implementation agreement, but since it is a common industry practice for manufactures to observe standards pertaining to a particular technology, it would have been obvious to one of ordinary skill in the art at the time the invention was made Ramakrishnan's system comprising a command from the OIF SPI-4, motivated by the needs of interconnecting between multivendors' systems.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Van Kim T. Nguyen whose telephone number is 571-272-3073. The examiner can normally be reached on 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zarni Maung, can be reached on 571-272-3939. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Van Kim T. Nguyen
Examiner
Art Unit 2151

vkn


FRANTZ B. JEAN
PRIMARY EXAMINER